

### **REMARKS**

Applicants note the re-opening of prosecution by the Examiner. In view of the new stated grounds of rejection, the newly-cited reference, and the non-finality of the Action, Applicants have elected to file this reply pursuant to 37 CFR §1.111.

#### ***Antecedent Basis Objections to the Claims***

Applicants note the Examiner’s stated objections to claims 1, 4, 12, and 13 with respect to antecedent basis for the term “said stage.” Applicants have taken the opportunity to amend claims 1-5, 11-13, and 15 to clarify and provide proper antecedent basis for that term. Applicants have also elected to re-write claim 2 in independent form.

#### ***The Rejection of Claims 1 and 12 Under 35 USC §102***

Also in the Office Action, the Examiner rejected claims 1 and 12 under 35 USC §102(e) as anticipated by Sarkar (US 6806991). This is the same ground of rejection made by the Examiner in the final rejection mailed December 22, 2005. Applicants believe that the rejection is not well taken and should be withdrawn for the following reasons.

Initially, applicants submit that the Examiner failed to carry his burden of establishing that each and every limitation recited in the claim is found in a single prior art reference. Anticipation under 35 USC §102 requires the disclosure in a single prior art reference of each element of the claims under consideration. *Alco Standard Corp. v. TVA*, 1 USPQ2d 1337, 1341 (Fed. Cir. 1986). The corollary of the rule is that absence from the reference of any claimed element negates anticipation. *Kloster Speedsteel AB v. Crucible Inc.*, 793 F.2d 1565, 230 USPQ 81 (Fed. Cir. 1986).

Sarkar does not teach a sample stage that is “affixed to at least one fixed support by means for causing displacement of the sample stage relative to the probe as recited in claims 1 and 12. Sarkar relates to a “fully released” microstage that includes a “payload structure” such as a lens, mirror, or manipulator. The microstage is moved using actuators that are coupled to flexure elements. In the most recent Office Action, the Examiner refers to col. 4, lines 10-49 of Sarkar as support for the assertion that Sarkar describes a “sample stage being affixed to the at least one fixed support by means for causing displacement (203 and 201) of the stage relative to the probe.” Col. 4, lines 10-49 of Sarkar simply describe the embodiment shown in Sarkar’s Fig. 2. Significantly, neither col. 4, lines 10-49 nor Sarkar’s

Fig. 2 show or describe a sample stage *affixed to at least one fixed support*. The Examiner has pointed to no structure in Fig. 2 corresponding to this claim element. Rather, and as will be discussed in greater detail below, the Examiner continues to use Sarkar as an encyclopedia or parts and has relied on an unrelated embodiment of the Sarkar invention, Fig. 10 as allegedly showing such a fixed support (“anchor 1002”).

As shown in the embodiment in Fig. 2, Sarkar requires multiple actuators 203a-d coupled to sample stage 202 through corresponding multiple flexure elements 201a-d in order to provide a system that can be moved simultaneously in both the X and Y directions. The Examiner has asserted that Sarkar discloses “a fast scanning stage for a scanning probe microscope” that includes a probe (Fig. 9, 901), a sample stage (202), with the stage comprising at least one fixed support (Fig. 10, 1002). Applicants note that the Fig. 2 embodiment of Sarkar does not show or describe a probe and does not teach how or where such a probe would be positioned. Applicants further note that Sarkar’s Fig. 9 is a broadly schematic of an array of nine “XYZ stages,” each including a probe 901. The “XYZ stages” and probes are depicted as empty squares, depicting no specific structure and unassociated and unconnected with any other structural elements.

Applicants disagree with the Examiner’s characterization of Sarkar as directed to a “fast scanning stage for a scanning probe microscope.” Nowhere does Sarkar teach or suggest a “fast scanning stage,” and Sarkar’s purpose is to be able to produce fully decoupled movement of the microstage in both the X and Y directions simultaneously. See, Abstract and claim 1. Thus, Sarkar requires both actuators and flexure elements *driven in opposition* along the axis of motion. Applicants do not use flexure elements, but rather use means driven in phase and directly coupled between a fixed support and a sample stage. Further, Sarkar’s microstage is designed to position a lens or mirror, as well as a disclosed embodiment using a probe. Applicants’ claimed fast scanning stage is designed for providing motion along a single axis in a scanning probe microscope to complete fast scan lines which are free from turnaround artifacts.

Moreover, Sarkar’s device differs in structure from applicants’ claimed fast scanning stage. Claim 1 recites, *inter alia*, that the sample stage is “affixed to said at least one fixed support” by “means for causing displacement of said stage relative to said probe”. Thus, for example, in the embodiment shown in Figs. 2A and 2B, sample stage 21 is fixed to supports 23 by actuators 22 which serve as the “means for causing displacement” in that embodiment.

Sarkar’s microstage, on the other hand, is designed to be “fully released.” Applicants understand Sarkar’s use of the term “fully released” to mean that the microstage is not anchored to any fixed structure, but instead is suspended from four flexure elements. For example, as shown in Fig. 2 of Sarkar, X-Y microstage 202 is suspended from flexures 201a-d. Flexures 201a-d are, in turn, connected to actuators 203a-d.

Thus, while Sarkar’s microstage may be connected (indirectly through flexures) to actuator elements, there is no structure in Sarkar corresponding to the recited “at least one fixed support” of applicants’ claim 1, nor to the affixation of the sample stage to such a fixed support. The Examiner is now relying on Sarkar’s Fig. 10 embodiment which depicts “anchors” 1002. However, Fig. 10 of Sarkar does not depict a sample stage or how the *thermal* actuator shown in Fig. 10 would be attached to a sample stage, if any. The Examiner’s continued use of Sarkar as an encyclopedia of parts, picking and choosing elements in isolation taken from multiple embodiments to arrive at applicants’ claimed invention is clearly improper.

Sarkar’s previous discussion of the use of thermal actuators was with respect to Prior Art Fig. 1B. That embodiment of Sarkar has nothing to do with the movement of a scanning stage for a scanning probe microscope. Rather, it relates to the simultaneous movement of a microlens 155 in the X and Y directions. Sarkar’s discussion of his Fig. 10 embodiment refers to U.S. Pat. No. 5,909,078 (col. 7, lines 10 et seq.). That patent describes a thermal actuator used to manipulate a microvalve.

The simple fact remains that none of Sarkar’s embodiments includes each and every element of applicants’ claim 1. Nor does the Sarkar specification describe how to combine disparate embodiments to arrive at applicants’ claimed invention. The rejection of claims 1 and under §102 is not well taken and should be withdrawn.

### ***The Rejection of Claim 13 Under 35 USC §102***

Also in the most recent Office Action, the Examiner rejected claim 13 under 35 USC §102(e) as anticipated by the newly-cited Miles et al (US 2004/0051542). As Miles does not constitute prior art under §102(e) (or any other sub-paragraph of §102), applicants submit that the rejection was made in error and should be withdrawn. Miles bears a U.S. filing date of July 2, 2003. The present application claims priority to provisional application Serial No.

60/435,518, filed December 20, 2002. Accordingly, Miles is not prior art and cannot be used to form the basis for a rejection.

While Miles does claim priority to two prior-filed British applications, MPEP §2136.03 and *In re Hilmer*, 359 F.2d 859, 149 USPQ 480 (CCPA 1966) clearly state that a reference is prior art for purposes of §102(e) only as of its *actual U.S. filing date*, not its foreign priority date.

***The Rejection of Claims 2, 3, 5, and 6 Under 35 USC §103***

Also in the most recent Office Action, the Examiner rejected claims 2, 3, 5, and 6 under 35 USC §103 as unpatentable over Sarkar in view of Miles. However, Miles is not prior art and cannot be used as a basis for an obviousness rejection. Accordingly, as the Examiner has relied on Miles, the rejection as stated cannot stand.

***The Rejection of Claim 4 Under 35 USC §103***

Also in the most recent Office Action, the Examiner rejected claim 4 under 35 USC §103 as unpatentable over Miles in view of Sarkar. However, Miles is not prior art and cannot be used as a basis for an obviousness rejection. Accordingly, as the Examiner has relied on Miles, the rejection as stated cannot stand.

***The Rejection of Claim 7 Under 35 USC §103***

Also in the most recent Office Action, the Examiner rejected claim 7 under 35 USC §103 as unpatentable over Sarkar in view of Miles, and taken further in view of Pai et al. However, Miles is not prior art and cannot be used as a basis for an obviousness rejection. Accordingly, as the Examiner has relied on Miles, the rejection as stated cannot stand.

***The Rejection of Claim 8 Under 35 USC §103***

Also in the most recent Office Action, the Examiner rejected claim 8 under 35 USC §103 as unpatentable over Sarkar in view of Miles, and taken further in view of Elings. However, Miles is not prior art and cannot be used as a basis for an obviousness rejection. Accordingly, as the Examiner has relied on Miles, the rejection as stated cannot stand.

***The Rejection of Claims 9 and 10 Under 35 USC §103***

Also in the most recent Office Action, the Examiner rejected claims 9 and 10 under 35 USC §103 as unpatentable over Sarkar in view of Miles, and taken further in view of Zdeblick. However, Miles is not prior art and cannot be used as a basis for an obviousness rejection. Accordingly, as the Examiner has relied on Miles, the rejection as stated cannot stand.

***The Rejection of Claim 11 Under 35 USC §103***

Also in the most recent Office Action, the Examiner rejected claim 11 under 35 USC §103 as unpatentable over Sarkar in view of Marchman. Claim 11 depends from independent claim 1. For purposes of simplifying this response, applicants submit that claim 11 is patentable for the same reasons that claim 1 is patentable.

***The Rejection of Claim 15 Under 35 USC §103***

Also in the most recent Office Action, the Examiner rejected claim 15 under 35 USC §103 as unpatentable over Miles in view of Ando et al. However, Miles is not prior art and cannot be used as a basis for an obviousness rejection. Accordingly, as the Examiner has relied on Miles, the rejection as stated cannot stand.

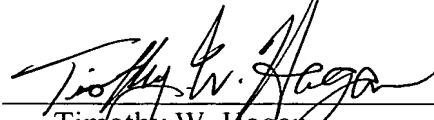
**Conclusion**

For all of the above reasons, applicants submit that the stated rejections are not well taken, and should be withdrawn. Early notification of allowable subject matter is respectfully solicited.

Respectfully submitted,

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